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What is the value of official statistics and how do we communicate that value?

Communicating innovation in National Statistical Offices

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Summary

Modernisation strategies for National Statistical Institutes (NSIs) are driven by four key factors. These include standardisation and industrialisation of the statistical business chain, implementation of re-usable infrastructure, adoption of metadata-driven systems and development of client-oriented communication strategies.

As part of NSI innovation strategies, statistical data need to be proactively communicated to engage users through a customer-centric approach. Innovative communication tools can help respond to increasing and changing user needs.

NSIs need to be able to communicate to different targets, customising tools and information systems. Communication services should aim at users, through systems directed at policymakers, stakeholders, media, civil society and other data users. These include web-based integrated tools like aggregator web-sites, wiki-like services, interactive briefing boards, multimedia newsletter and data journalism products.

The paper is presented for discussion to the Conference of European Statisticians seminar on "What is the value of official statistics and how do we communicate that value?"

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I. Introduction

1. National Statistical Institutes (NSIs) are increasingly faced by new challenges both in terms of modernisation of statistical production processes and of the growing and increasingly differentiated information needs. The transition of official statistics from a niche service to a commodity able to guide individual, social and political behaviours, to inform the decision-making process, to help evaluate policies and foresee the consequences of today's choices, clearly highlights the role of NSIs as fundamental actors in the knowledge society. It also stresses the need to identify efficient and shared communication strategies to inform stakeholders.

2. In recent years, societies have been evolving towards a "Web 3.0 model", characterised by the on-going trends in web technologies and progress in information production, through the availability of big data and increasing demand for (linked) open data. Interoperability and availability of linkable accessible data are two key elements of this new trend. The consequences for users are that data supply has increased dramatically, but at the same time it becomes more difficult to make sense of information and use it to make decisions. The challenge for NSIs is to provide services that allow users to extract tailored information from data in a friendly and interactive way.

3. NSIs' response to these challenges has to focus on communicating and disseminating statistical information based on an integrated approach. This is built on the extensive use of new media, service-oriented websites and other on-line information applications to put users in the "driver's seat". New communication channels are required in order to reach a higher number of users, responding to specific and fast-changing demands. Such synergic approach can bring positive effects on "consumers" of statistical information, strengthening the perception of the innovative value added brought about by official statistics: the transformation of statistical data into knowledge. This can contribute to establishing and maintaining an active and collaborative dialogue with users (e.g., engagement, customer fidelity, sharing etc.), strengthening the reputation of NSIs.

4. The rest of this note will briefly touch on the innovation scenario for NSIs and consequences for dissemination and communication, as well as the transformation of traditional statistical outputs into knowledge-intensive user-centric services. It will present Istat modernisation strategy and the communication approach consistent with the innovation agenda. The note concludes with future developments and challenges.

II. The innovation scenario

5. NSIs have increasingly focused on revamping statistical production methods and products to meet new information needs. Priority was given to optimising statistical information production systems (cost-efficiency actions) and improving the quality and quantity of information products tailored to stakeholders needs (cost-effectiveness).

6. Modernisation strategy objectives that are shared across NSIs include (Figure 1) reducing the respondents' burden for households and companies and reducing the cost of the statistical production process. This is also combined with a trend towards general government modernisation reforms fostered by IT developments including the support to paperless processes. At the same time IT developments (including the development of open platforms and software built on the concept of interoperability) increase the availability of tools that allow users to generate interactively the information needed when they have to use it. This contributes to spurring evidence-based decision making by different stakeholders. The use of innovative dissemination tools can help better respond to fast growing user needs.

Figure 1
Modernisation Objectives

NSIs share common innovation goals
Ensuring cost-efficiency
Reusing services and infrastructure
Enhancing data accessibility and re-usability
Using innovative and effective communication tools
Responding to increasing and changing user needs
Supporting paperless government
Investing on innovation culture

Source: Istat, 2013

7. In accordance with these objectives, NSI modernisation strategies have been developed and implemented in response to these expanding needs. The change was focused on the standardisation and industrialisation of the statistical business chain, the implementation of re-usable infrastructures to support National Statistical Systems and NSI Networks, the adoption of a metadata-driven systems and the development of client-oriented tools to enhance the value creation in official statistics.

8. The implications for NSIs of this new environment cover several dimensions. These include the following need-based approach as a guidance to the design of communication strategies:

(a) listening and comparing different point of views (internally and externally) and utilising feedback to drive decisions;

(b) promoting and sharing innovation through simple messages and tools;

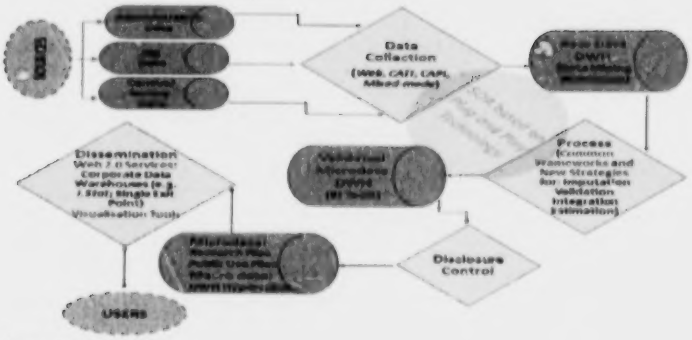
(c) joining forces to operate the selected innovation model;

(d) encouraging a cooperative environment to foster innovation (resources, exchange of ideas, common goals).

9. *Stat2015* is the flagship innovation programme that Istat has been carrying out since 2010: it is designed to allow the transition to a business environment moving from a stovepipe model to a new structure based on a Service-Oriented Architecture (SOA) supported by plug-and-play technology, consistent with the industrialisation and standardisation of production processes achieved by reusing information that has been already collected on respondents through a variety of sources and building platforms that allow seamless exchange and data integration.

10. The adoption of an Enterprise Architecture (EA) and of a Business Architecture (BA) is required to redesign statistical processes and to implement generalised services, methods and standards inspired by a common vision shared with the European and international statistical communities (Figure 2). This programme is both ambitious and challenging, requiring structural changes in the working environment, in its technological and methodological foundations.

Figure 2
Stylised Stat2015 framework



Source: Istat, 2012

11. *Stat2015* infrastructure is compliant with the SOA framework and aims at:

(a) collecting survey data, accessing administrative and other big data sources using digital technologies (e.g., from web portals, to computer-assisted interview collection, to administrative files, single entry point and web scraping tools);

(b) organising data in a raw data repository to be processed;

(c) carrying out data integration, validation and estimation tasks with generalised tools (e.g., methodological software, etc.);

(d) storing validated micro data in a data warehouse to be used for the following dissemination stage;

(e) disseminating micro and macro data through different tools reflecting user needs (e.g., from Micro data Files for Researchers through Research Data Centres and anonymous Public Use Files to the corporate macro data warehouse I.stat and related visualisation and communication tools).

12. Development projects included in the *Stat2015* programme are led by teams that involve human resources spanning across various Istat organisation units and focusing on specific stages of the GSBPM (Generic Statistical Business Process Model)-based production process. Specific resources in the budget are allocated to the programme projects and investment planning (e.g., IT and methodological support) reflects the high priority assigned to the programme. More in detail, for 2013 about one fifth of the whole budget has been allocated to *Stat2015*.

13. In the short run, *Stat2015* development is planned with an emphasis on the following key components of the programme:

(a) design and implementation of the shared Business Architecture (BA);

(b) design and implementation of the Corporate Metadata System (CMS);

(c) tools to enhance user need assessment capacity;

(d) data collection and management web portals;

(e) generalised methods and tools for data processing and analysis;

(f) new dissemination and communication tools for micro and macro data to enhance user interactions.

14. With regard to BA, this is central for defining, managing and monitoring the necessary changes for *Stat2015* development: this approach can guide the operational changes in the production chain, highlighting the required infrastructure that should be put in place under this framework .

15. CMS planned design and implementation are expected to consolidate existing systems (e.g., the quality metadata information system). The medium-term objective of the process is to adopt an Istat metadata architecture that guides users through all stages of the production chain.

16. Assessing user needs represents the very first stage for tailoring products and services, developing new tools and partnerships that allow Istat to assess what users really need. In this area, the following two topics feature prominently in the agenda of *Stat2015*:

(a) development of web-based tools to gather customer feedback to allow maximum user interactions with Istat. The key portal to collect these feedback and suggestions is the corporate web site www.istat.it, but also social platforms and networks are increasingly exploited to gather feedback in a dynamic way;

(b) redesign of the web portal to provide adequate information and specific tools, helping to disseminate the results of the innovation programme, its infrastructure and services among this network of public and private producers of statistics.

III. Istat "Communication-4-Innovation" strategy

17. Istat "communication-4-innovation" strategy is embedded in the *Stat2015* programme. Key communication actions are defined depending on the target. Specific user groups selected by Istat include, selected population groups (e.g., young, elderly, women), universities, socio-economic research bodies, decision-makers, opinion leaders, stakeholders, enterprises, media. The strategy also covers national and international institutions, general government and territorial bodies, international statistical bodies and institutions.

18. Key actions in this area include the following:

(a) profiling users to offer customised services/products through dedicated channels and make the information produced more accessible and usable;

(b) leveraging multimedia and digitalisation effectively by using a targeted multichannel strategy to offer products and services, especially through new digital communication channels;

(c) promoting and sharing innovation through simple messages and tools, maximising communication flows both inside and outside the Institute, thus fostering impartial access to information of all involved parties;

(d) monitoring the communication process through measurement systems of communication initiatives and actions, and the definition of tools and methods for research and analysis of communication impacts;

(e) creating international networks and participating in the most advanced communities of the sector.

19. More in general, to communicate the leading role in innovation, NSIs have to face the big challenge of adapting to the evolving internet world, mobile technologies and social media and then structuring their services and products accordingly. Istat strategy is based on promoting initiatives such as:

(a) sharing innovation-related best practices (also in the light of the feedback collected through reputation surveys), and the role of official statistics in policy assessment;

(b) endorsing the image of digitalised official statistics, by promoting technological innovation and efficient management and administration;

(c) fostering partnerships with leading operators and actors in the field of innovation on cutting edge issues (e.g., Google on the use of big data);

(d) adopting innovative communication standards: common terminology responding to an innovation-oriented community, shared graphical standards, enhancing data accessibility and re-usability;

(e) encouraging a policy of social responsibility to reduce environmental impact and respect international eco-friendly measures.

20. NSIs challenge is to be able to service this wide range of customer requirements taking into account different degrees of statistical literacy (Figure 3) through:

(a) customer satisfaction and customer profiling surveys like VoC (Voice of the Customer), aiming at identifying statistical information users;

(b) web analytics and systematic analysis of users' feedback and requests;

(c) "Guidelines on social media policy" to outline the communication strategy for the different social platforms (e.g. behaviours in directly managed social media pages, communication languages adopted, management and interaction modes etc.), with special attention dedicated to emerging social networks;

(d) responsive websites for mobile devices;

(e) data visualisation tools: info-graphic to communicate statistics from a narrative point of view besides complex data analysis and visual navigation tools;

(f) virtual press office, e.g. Web 2.0 press office;

(g) multi-functional and technological blogs to host and support informal meetings with different users;

(h) intranet portals able to supply adequate working tools and favour knowledge sharing to foster innovation (exchange of ideas, common goals).

Figure 3
Providing tools for different users

For Internal Users

- Intranet portal
- Sharing platforms
- Network blogs
- Virtual forums
- Web meetings
- Web seminars
- E-learning systems
- Seminars
- Workshops
- Training Courses

For External Users

- Aggregator web-site
- Web-based integrated tools
- Wiki-like services
- Interactive briefing boards
- Multimedia newsletter
- Data journalism

For Institutional Users

- Integrated information systems
- Dashboards for benchmarking
- Subject briefs
- Policy impact tools

21. In order to enhance data accessibility and re-usability, statistical information and analysis should be disseminated and communicated through an open strategy of data sharing. This can support the knowledge of economic, social and environmental trends and enhance the decision-making processes. Moreover, a coordinated development of integrated

information systems is needed to help access information and reduce statistical burden (e.g., by increasing the use of big data for communication purposes).

22. The availability of tools and services enhancing data access and re-use is fundamental to communicate innovation. In particular, priorities have been identified by Istat for the medium term in the development of the following:

(a) usable, responsive and accessible web-based integrated tools suitable for mobile devices, which can support interactive contents. These tools should be compliant with web-design structured taxonomies and semantics, taking into account web analytics and user research on search engines;

(b) web and API services based on shared standards and open formats;

(c) data visualisation and info-graphic dissemination tools;

(d) digital editing consistent with content, format and production process innovation, to be released on e-stores;

(e) apps and widget for mobile phones;

(f) web services to access micro data to favour the availability of public-use files;

(g) multimedia to disseminate statistical information, such as videos on key information areas based on integrated statistical data;

(h) endorsing of official statistics open production as main supplier of re-usable data also through social platforms.

23. Moreover, in order to orient communication and dissemination strategies to innovation, statistical organisations can share ideas, projects and also re-use tools and components in a plug-and-play fashion. Cooperation should also promote a common strategy on emerging issues such as open data and big data through:

(a) active participation in international and innovative networks;

(b) promotion of frequent informal meetings to exchange ideas and share innovative projects;

(c) use of common innovative tools developed through sectorial communities and social platforms (e.g., Facebook, YouTube, Flickr, SlideShare, Twitter).

IV. Future developments

24. As part of NSI innovation strategies, statistical data need to be proactively communicated by NSIs to engage users through a customer-centric approach being aware of user needs. Innovative communication tools can help respond to increasing and changing user needs. In particular, a clear and simple language, the correct use of social media, user-friendly web tools to browse and visualise data, the focus on re-use and open data are drivers to spread innovation in the statistical business chain, focusing on information demand.

25. The overall communication strategy of innovation is therefore based on the value provided by accompanying and enriching statistical information with services and tools easing its use and favouring its conversion into knowledge. In order to facilitate this transition, NSIs will have to adopt a balanced mix of new communication tools, so that the original message can remain substantially correct and consistent with the disseminating institution intention also in the subsequent web passages, e.g. when disseminated through social platforms.

26. This means that communicative efficacy will depend on high-quality, clear and precise messages, the only able to protect it from semantic distortions. The new client-oriented communication model will be enriched through the development of a collaborative, horizontal strategy based on listening, comparing different point of views and fostering the exchange of ideas. Within this framework, the new digital communication channels become a fundamental tool.

27. NSIs need to be able to communicate to different targets, customising tools and information systems. Communication services should aim at users, through systems directed at policymakers, stakeholders, media, civil society, and data users. These include web-based integrated tools like aggregator web-sites, wiki-like services, interactive briefing boards, multimedia newsletter and data journalism products. Communication targets also include NSI staff who should have access to tools like intranet portals, sharing platforms, web seminars, and e-learning systems.

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